

CLAIMS

What is claimed is:

1. An ink supply system for use with a printer of the type in which ink is deposited in a receiving region on a plate and ink is scraped from the plate leaving ink in the receiving region, comprising:

an ink cup having a hollow interior defining an ink reservoir and defining an outer edge, the outer edge having a scraping element thereon for engaging the plate, the ink cup having an inlet and an outlet;

a pump having a suction side and a discharge side, the suction side being in flow communication with the ink cup outlet for drawing ink from the cup;

a viscosity controller in flow communication with the pump discharge and configured to receive ink from the pump;

a flow conduit extending between the viscosity controller and the ink cup for providing a flow of ink from the viscosity controller to the ink cup,

wherein the pump draws ink from the cup creating a negative pressure within the cup and wherein the negative pressure within the cup draws ink from the viscosity controller to the ink cup through the flow conduit.

2. The ink supply system in accordance with claim 1 wherein the ink cup is at an elevation and wherein the viscosity controller is at an elevation that is lower than the elevation of the ink cup.

3. The ink supply system in accordance with claim 1 including an ink thinner supply, the ink thinner supply being in flow communication with the viscosity controller.

4. The ink supply system in accordance with claim 3 wherein when the viscosity controller senses a higher than desired viscosity of the ink, a quantity of the ink thinner is provided to the viscosity controller to mix with the ink reduce the ink viscosity.

5. The ink supply system in accordance with claim 1 wherein the flow conduit extending between the viscosity controller and the ink cup is a passive flow conduit.

6. The ink supply system in accordance with claim 2 wherein the flow conduit extending between the viscosity controller and the ink cup is a passive flow conduit.

7. The ink supply system in accordance with claim 1 wherein the scraping element is a doctor blade.

8. The ink supply system in accordance with claim 1 wherein the viscosity controller includes a viscosity measuring device.

9. An ink supply system for use with a printer of the type in which ink is deposited in a receiving region on a plate and ink is scraped from the plate leaving ink in the receiving region, comprising:

an ink cup having a hollow interior defining an ink reservoir and defining an outer edge, the outer edge having a scraping element thereon for engaging the plate, the ink cup having an inlet and an outlet;

a viscosity controller in flow communication with the ink cup;

a first flow conduit extending between the viscosity controller and the ink cup inlet for providing a flow of ink from the viscosity controller to the ink cup;

a second flow conduit extending between the viscosity controller and the ink cup outlet for providing a flow of ink from the ink cup to the viscosity controller; and

means for creating a less than atmospheric pressure in the ink cup disposed in the second flow conduit.

10. The ink supply system in accordance with claim 9 including an ink thinner supply in flow communication with the viscosity controller, and wherein when the viscosity controller senses a higher than desired viscosity of the ink, a quantity of ink thinner is provided to the viscosity controller to mix with the ink to thin the ink.

11. The ink supply system in accordance with claim 9 wherein the viscosity controller includes a viscosity measuring device.

12. The ink supply system in accordance with claim 9 wherein the first flow conduit is a passive flow conduit.

13. The ink supply system in accordance with claim 9 wherein the scraping element is a doctor blade.

14. The ink supply system in accordance with claim 9 wherein the ink cup is at an elevation and wherein the viscosity controller is at an elevation that is lower than the elevation of the ink cup.

15. The ink supply system in accordance with claim 9 wherein the means for creating a less than atmospheric pressure is a pump disposed between the ink cup and the viscosity controller and wherein the pump take suction from the ink cup.